



Effects of diurnal temperature range on cardiovascular and respiratory hospital admissions in Korea

Author(s): Lim YH, Hong YC, Kim H
Year: 2012
Journal: The Science of The Total Environment. 417-418: 55-60

Abstract:

The effects of heat and cold waves have been studied as risk factors for cardiovascular and respiratory diseases. However, few studies have examined the effect of diurnal temperature changes on health. We hypothesized that the diurnal temperature range (DTR) may affect the rate of hospital admissions for cardiovascular- and respiratory-related diseases, and therefore investigated the risk of hospital admissions of cardiovascular (stroke, myocardial infarction, ischemic heart disease, cardiac failure, cardiac disease, and arrhythmia) and respiratory (asthma, chronic obstructive pulmonary disease, and pneumonia) diseases attributable to DTR in four metropolitan areas in Korea during 2003-2006. The area-combined effects of DTR on some cardiovascular and respiratory diseases were significantly increased by an increment of DTR. In particular, the effects on cardiac failure and asthma were significant with the percentage change of hospital admissions per 1 °C increment of DTR at 3.0% (95% CI, 1.4-4.6) and 1.1% (95% CI, 0.1-2.0), respectively, among 9 diseases. For those 75. years and older, the DTR effect on asthma admissions was greater than in those aged under 75. years. These results support the hypothesis of a positive association between DTR and cardiovascular and respiratory hospital admission. © 2012 Elsevier B.V.

Source: <http://dx.doi.org/10.1016/j.scitotenv.2011.12.048>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Ozone, Particulate Matter

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: South Korea

Health Impact: ☐

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Respiratory Effect

Cardiovascular Effect: Heart Attack, Stroke, Other Cardiovascular Effect

Cardiovascular Disease (other): ischemic heart disease; heart failure ;cardiac disease; arrhythmia

Respiratory Effect: Asthma, Bronchitis/Pneumonia, Chronic Obstructive Pulmonary Disease

Population of Concern: A focus of content

Population of Concern: ☐

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☐

format or standard characteristic of resource

Research Article

Timescale: ☐

time period studied

Time Scale Unspecified